

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

1-20. (Cancelled)

21. (Currently Amended) A wet and dry weather water disinfection system for reducing harmful pathogens found in water runoff entering a municipal separate storm sewer system-type stormwater management infrastructure comprising:

a ~~storm water management infrastructure~~ plurality of catch basins, each said catch basin flowingly coupled to a municipal separate storm sewer system, each said catch basin comprising a storm sewer comprising an inlet configured to accept and direct water runoff and flowingly coupled from a street to a receiving body of water through said municipal separate storm sewer system;

a plurality of disinfecting chemical dispenser dispensers, each located in-line to said storm water management infrastructure where one of said catch basins, wherein each said disinfecting chemical dispenser is configured to add introduce a disinfectant chemical directly into said water flowing through said storm sewer inlet such that said disinfecting chemical mixes with said water in a chamberless region of said catch basin management infrastructure, said disinfectant chemical capable of reducing harmful pathogens in said water;

a water pollution sensor configured to measure water pollution characteristics attributable to said water flowing through said storm water management infrastructure sewer inlet;

a means to measure water flow rate attributable to said water flowing through said storm ~~water management infrastructure~~ sewer inlet; and

a control unit ~~that controls~~ informationally coupled to said disinfecting chemical dispenser, said water pollution sensor and said flow rate measurement means, said control unit configured to control an amount of said disinfectant chemical added by said disinfecting chemical dispenser to said water flowing through said storm water management infrastructure sewer inlet to said receiving body of water based on said flow rate through said storm water management infrastructure as determined by a flow rate of said water through said storm sewer inlet as detected by said flow rate measurement means, and said amount of said disinfecting chemical further determined by water pollution characteristics of said water as detected by said water pollution sensor.

22-53. (Cancelled)

54. (Currently Amended) The wet and dry weather water disinfection system of claim 21 wherein said water pollution sensor configured to measure water pollution characteristics is located upstream of at least one of said plurality of disinfecting chemical dispenser dispensers and informationally coupled to said control unit.

55. (Currently Amended) The wet and dry weather water disinfection system of claim 21 further comprising a downstream water pollution sensor configured to measure said water pollution characteristics downstream of at least one of said plurality of disinfecting chemical dispensers and informationally coupled to said control unit.

56-60. (Cancelled)

61. (Currently Amended) An automated in-line storm water disinfection system for reducing harmful pathogens in wet and dry weather water runoff in a municipal separate storm sewer system-type stormwater management infrastructure comprising:

a monitor for measuring flow rate of water runoff through a ~~storm water management infrastructure~~ municipal separate storm sewer system, whereby said flow rate can be measured for both wet and dry weather storm water runoff;

a ~~chamberless~~ means for disinfecting said water runoff;

a control unit located in-line to said ~~storm water management infrastructure~~ municipal separate storm sewer system and informationally coupled to said flow rate monitor and said disinfecting means, and capable of causing said disinfecting means to dispense disinfectant into said water runoff in a dosage adjusted for said measured flow rate, for purposes of reducing harmful pathogens in said water runoff; and

at least one sensor coupled to said control unit for measuring water pollution characteristics attributable to said water runoff and providing input to a process model used by said control unit.

62. (Cancelled)

63. (Cancelled)

64. (Previously Presented) The system of claim 61 wherein said water disinfecting means is a chemical dispenser.

65. (Previously Presented) The system of claim 61 wherein said water disinfecting means is a UV source; and wherein said at least one sensor is a UV spectrometer interfaced to said water runoff via a fiber optic cable.

66. (Previously Presented) The system of claim 61 wherein said control unit adjusts said water disinfecting means automatically based on physiochemical properties of said water runoff as measured by said at least one sensor.

67. (Currently Amended) The system of claim 61 wherein said control unit adjusts said water disinfecting means automatically based on biological properties of said water runoff as measured by said at least one sensor.
68. (Currently Amended) The system of claim 61 wherein said control unit adjusts said water disinfecting means automatically based on hydraulic properties of said water runoff as measured by said at least one sensor.
69. (Previously Presented) The system of claim 61 wherein said at least one sensor is upstream of said disinfecting means to measure pre-treatment characteristics of said water runoff.
70. (Previously Presented) The system of claim 61 wherein said at least one sensor is downstream of said disinfecting means to measure post-treatment characteristics of said water runoff.
71. (Previously Presented) The system of claim 61 wherein said at least one sensor measures physiochemical properties of said water runoff.
72. (Previously Presented) The system of claim 61 wherein said at least one sensor measures biological properties of said water runoff.
73. (Previously Presented) The system of claim 61 wherein the at least one sensor is a sensor array.
74. (Cancelled)
75. (Cancelled)
76. (Currently Amended) An automated in-line wet and dry weather water flow disinfection system for disinfecting storm water runoff in a municipal separate storm sewer system-type stormwater management infrastructure comprising:

an in-line flow rate monitor for measuring flow rate of water runoff through at least one catch basin of a municipal separate storm sewer system a storm water management infrastructure;

a chamberless water treatment unit comprising a chemical dispenser for dispensing at least one disinfectant chemical into said water runoff;

a control unit located in-line to said ~~storm water management infrastructure~~ municipal separate storm sewer system and electrically coupled to said flow rate monitor, said control unit further coupled to said chemical dispenser and capable of controlling ~~the~~ an amount of said chemical disinfectant applied to said water runoff;

~~said control unit further capable of automatically determining a dosage level of said chemical disinfectant based on said flow rate;~~

at least one upstream sensor feedback coupled to said control unit to provide feedback to said control unit regarding pre-treatment biological properties of said water runoff; ~~and~~

at least one downstream sensor feedback coupled to said control unit to provide feedback to said control unit as to post-treatment biological properties of said disinfected water runoff; and

said control unit further programmed to automatically determining a dosage level of said chemical disinfectant based on said flow rate, input from said upstream sensor and input from said downstream sensor.

77. (Currently Amended) The automated in-line wet and dry weather water flow disinfection system of claim 76 wherein said biologic properties further comprise ~~the~~ a concentration of pathogenic microorganisms.
78. (Cancelled)